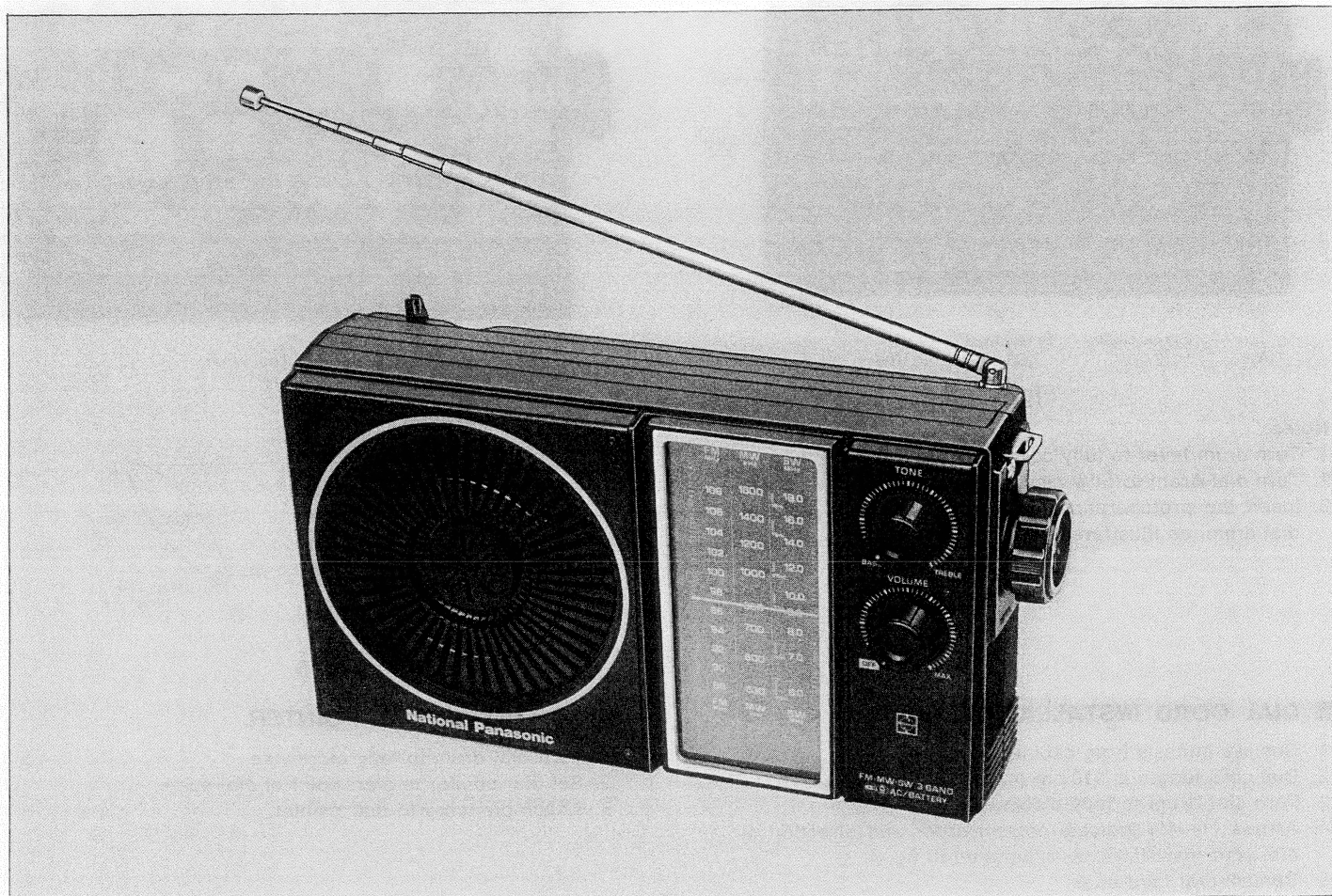


Service Manual

Radio
RF-818JB

FM/MW/SW 3-BAND PORTABLE RADIO



SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz	Flashlight Batteries)
	MW 520~1610 kHz (577~186m)	(National UM-2 or equivalent)
	SW 5.9~18 MHz (5.75~18.8m)	6W (AC Only)
Intermediate Frequency:	FM 10.7 MHz	Speaker:
	AM (MW, SW) 455 kHz	9 cm (3½") PM Dynamic Speaker
Sensitivity:	FM 2μV for 50mW Output	Dimensions:
	MW 45μV/m for 50mW Output	217(Wide) x 127(High) x
	SW 20μV/m for 50mW Output	59(Deep) mm
Power Output:	1.3W Maximum	(8½" x 5" x 2½")
Power Source:	AC 110~125V/220~240V	0.96 kg. (2 lb. 2 oz.) without
	50-60 Hz or 4.5V (Three "C" Size	batteries
		Speaker8Ω
		Earphone Jack8Ω

Power Consumption:

Speaker:

Dimensions:

Weight:

Impedance:

Specifications are subject to change without notice for further improvement.

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

1968

■ TO REMOVE CHASSIS

1. Remove tone and volume knobs from cabinet.
2. Remove battery cover.
3. Remove three (3) cabinet cover screws, nos. 1~3, as illustrated in fig. 1.
4. Pull out three (3) connecting sockets.

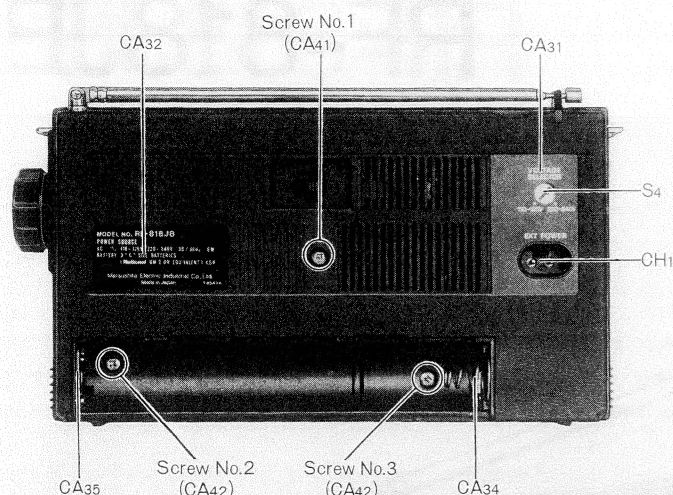


Fig. 1

Notes:

1. Turn drum lever to fully counter-clockwise.
2. Turn dial drum to fully clockwise.
3. Insert the protuberances of drum lever in the hole of dial drum, as illustrated in fig. 3.

5. Remove four (4) red chassis screws, nos. 1~4, as illustrated in fig. 2.
6. To remove chassis completely, unsolder lead wire to earphone jack and speaker terminals.
7. To reassemble, reverse the above procedure and read the following notes.

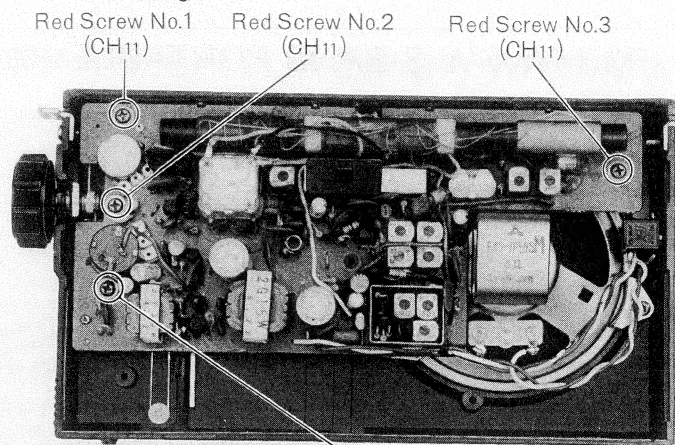


Fig. 2

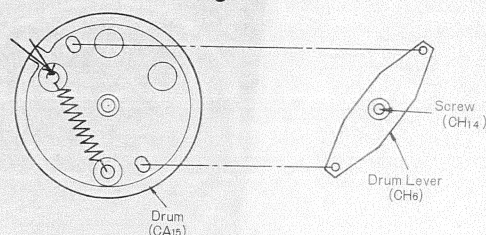


Fig. 3

■ DIAL CORD INSTALLATION GUIDE

1. Remove chassis from cabinet.
2. Dial cord length is 110 cm (43 5/16").
3. Turn dial drum to fully clockwise.
4. Arrows (1~10) indicate correct order and direction of dial cord installation as illustrated in fig. 4.
5. Cement dial cord ends.

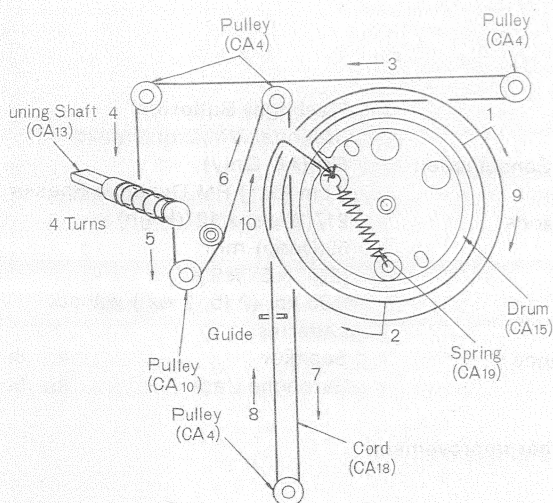
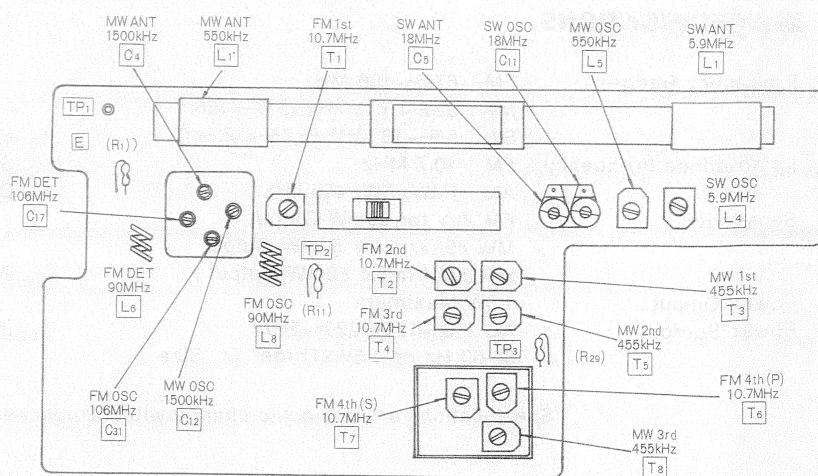


Fig. 4

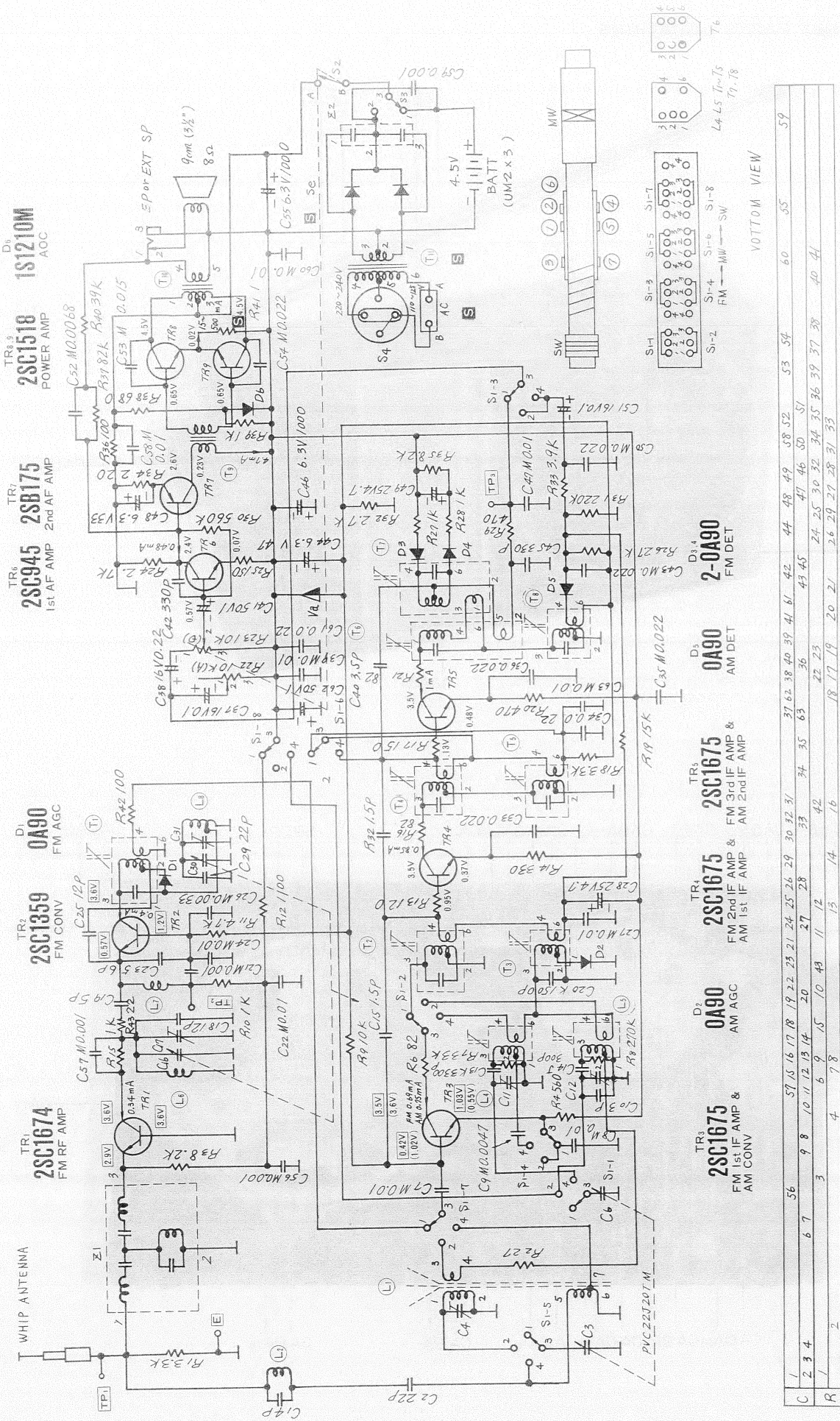
■ TO MOUNT DIAL POINTER

1. Turn dial drum to fully clockwise.
2. Set dial pointer to start point of dial scale.
3. Attach dial cord to dial pointer.





■ ALIGNMENT POINTS



Schematic Diagram – Model RF-818JB



■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Notes: 1. Set volume control to minimum. 2. Set tone control to treble. 3. Set band selector switch to MW, SW or FM. 4. Set power source voltage to 4.5 volts DC. 5. Output of signal generator should be no higher than necessary to obtain an output reading.					
SWEEP GENERATOR SIGNAL GENERATOR or		RADIO DIAL SETTING [DISTANCE]	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
CONNECTIONS	FREQUENCY				
MW ALIGNMENT					
(1) Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz)	Output meter across earphone jack.	T ₃ (1st IFT) T ₅ (2nd IFT) T ₈ (3rd IFT)	Adjust for maximum output.
(2) "	550 kHz	550 kHz [6.98mm($\frac{9}{32}$ ")]	"	L ₅ (OSC Coil) (*) L ₁ ' (ANT Coil)	Adjust for maximum output. Adjust L ₁ ' by moving coil bobbin along ferrite core.
(3) "	1500 kHz	1500 kHz [66.79mm($2\frac{5}{8}$ ")]	"	C ₁₂ (OSC Trimmer) C ₄ (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
SW ALIGNMENT					
(4) "	5.9 MHz	5.9 MHz [2.79mm($\frac{1}{8}$ ")]	"	(*) L ₁ (ANT Coil) L ₄ (OSC Coil)	Adjust for maximum output. Adjust L ₁ by moving coil bobbin along ferrite core.
(5) "	18 MHz	18 MHz [70.72mm($2\frac{11}{16}$ ")]	"	C ₁₁ (OSC Trimmer) C ₅ (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
(*) Cement antenna bobbin with wax after completing alignment.					
FM-IF ALIGNMENT					
(6) Connect to point TP ₂ and  .	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point TP ₃ , Common to  .	T ₁ (FM 1st IFT) T ₂ (FM 2nd IFT) T ₄ (FM 3rd IFT) T ₆ (FM 4th IFT) (Primary)	Adjust for maximum amplitude and proper linearity between ± 100 kHz markers. (Refer to fig. 5)
(7) "	"	"	Connect vert. amp. of scope to point TP ₃ , Common to  .	T ₇ (FM 4th IFT) (Secondary)	Adjust T ₇ so that 10.7 MHz marker appears at the center. (Refer to fig. 6.)
FM-RF ALIGNMENT					
(8) Connect to point TP ₁ through FM dummy antenna. Common to  . (Refer to fig. 7).	90 MHz	90 MHz [9.14mm($\frac{11}{32}$ ")]	Output meter across earphone jack.	L ₈ (FM OSC Coil) L ₆ (FM DET Coil)	(*) Adjust for maximum output.
(9) "	106 MHz	106 MHz [62.8mm($2\frac{5}{16}$ ")]	"	C ₃₁ (FM OSC Trimmer) C ₁₇ (FM DET Trimmer)	(*) Adjust for maximum output. Repeat steps (8) and (9).
(*) Three output responses will be present; Proper tuning is the center frequency.					

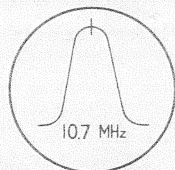


Fig. 5

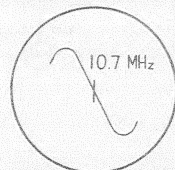


Fig. 6

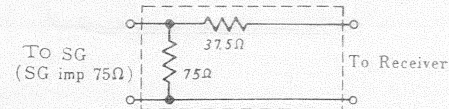
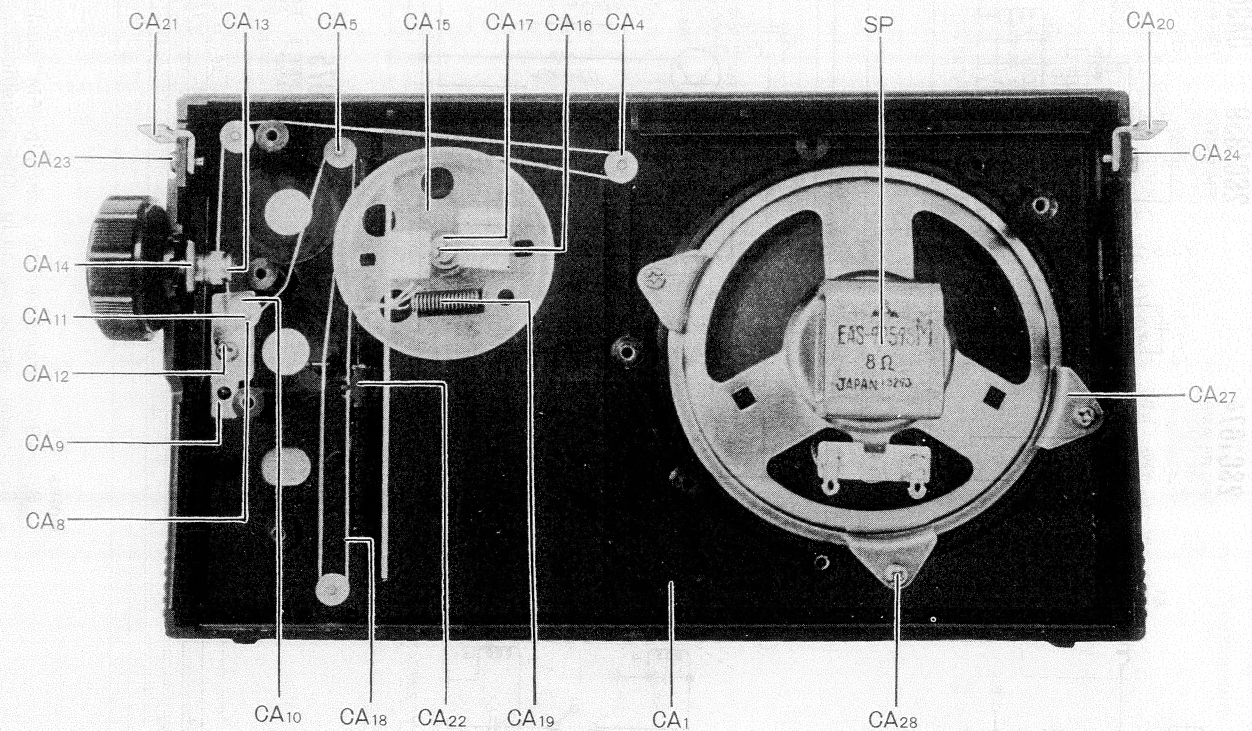
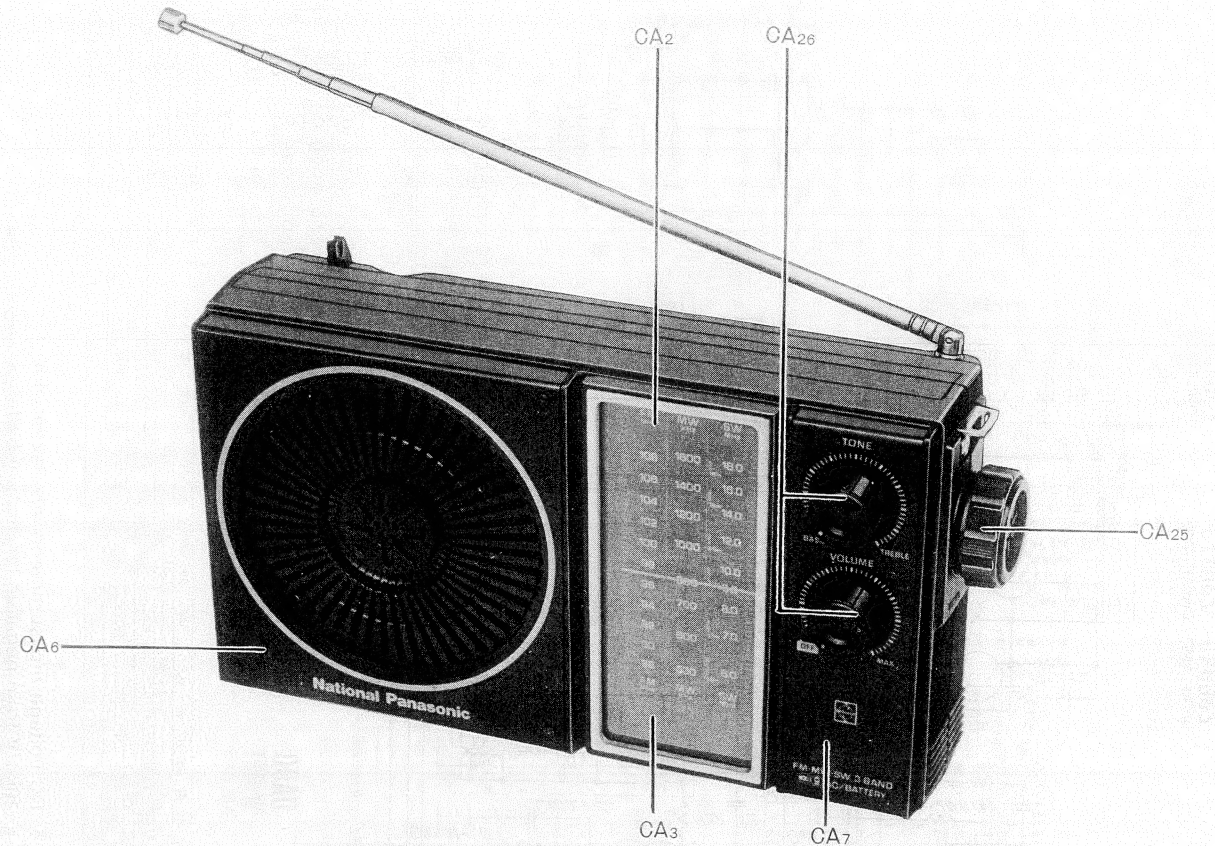
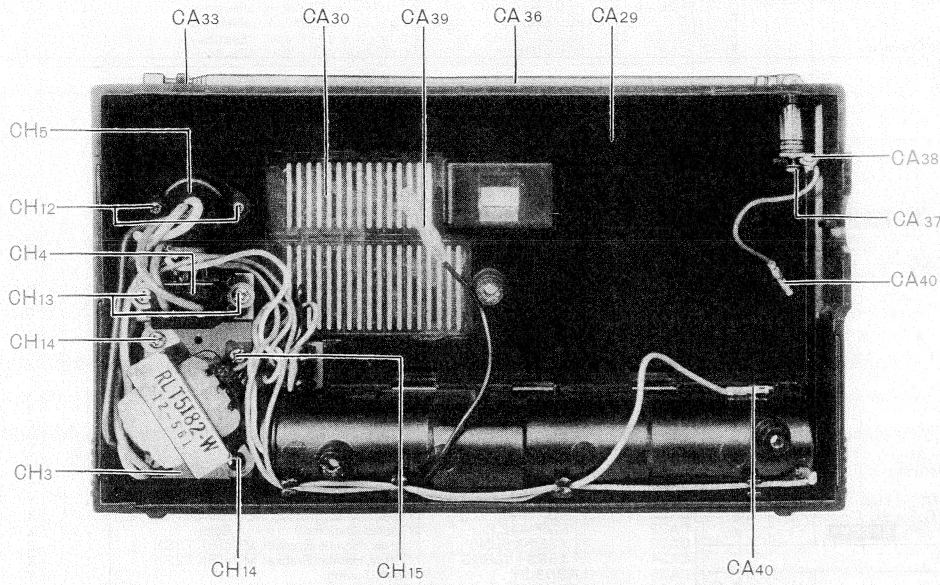


Fig. 7 FM Dummy Antenna

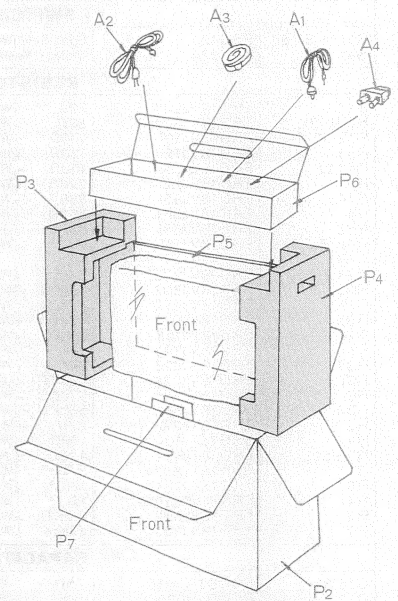
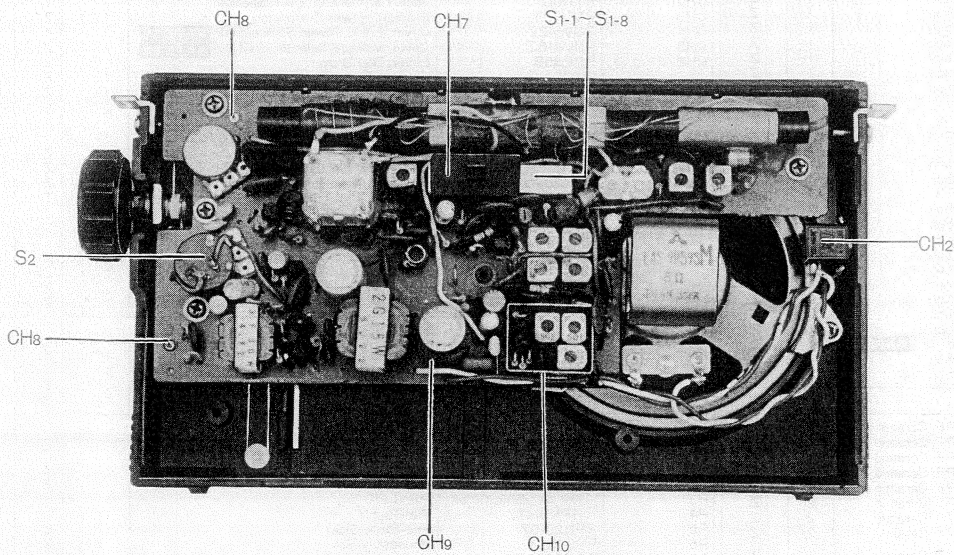
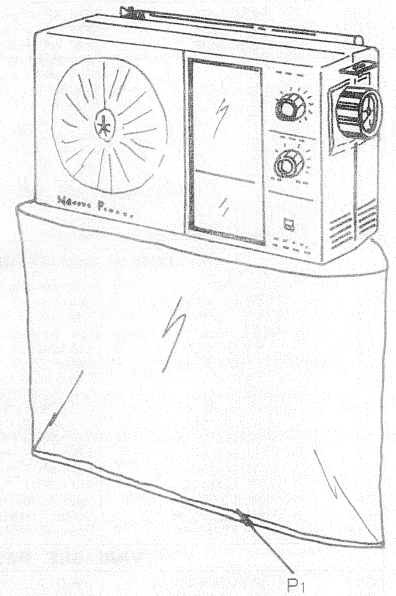
■ CABINET PARTS LOCATIONS



CHASSIS PARTS LOCATIONS



ACCESSORIES & PACKING PARTS LOCATIONS



REPLACEMENT PARTS LIST

- NOTES:**
- Part numbers are indicated on most mechanical parts. Please use this part number for part orders.
 - X-Z rank parts will cover 80% of repair needs. X+Y rank parts will cover 95% of repair needs. Z rank parts are less necessary.
 - SAFETY** indicates that only parts specified by the manufacturer be used for replacement in critical circuits.

Ref.No.	Part No.	Description	Per Set	Remarks
TRANSISTORS AND DIODES				
TR1	2SC1674	FM RF Amplifier	1	X
TR2	2SC1359	FM Converter	1	X
TR3	2SC839	FM 1st IF Amplifier & AM Converter,	1	X
TR4,5	2SC1675	FM 2nd & AM 1st IF Amplifier,	2	X
		FM 3rd & AM 2nd IF Amplifier		
TR6	2SC945	1st AF Amplifier	1	X
TR7	2SB175	2nd AF Amplifier	1	X
TR8,9	2SC1518	Power Amplifier	2	X
D1,2,5	0A90	FM/AM AGC, AM Detector	3	X
D3,4	2-0A90	FM Detector	1 Pair	X
D6	1S1210M	Operation Compensator	1	X

VARIANTE AND RECTIFIER				
Se	RVD10D1	Rectifier	SAFETY	2
Va	EYV32001R2J2	Variante		1

COILS AND TRANSFORMERS				
L1	RLF5F78-0	MW/SW Antenna Coil	1	X
L2	RLQY75S5-0	Choke Coil	1	Y
L4	RL03M5	SW Oscillator Coil	1	Y
L5	RL02M7	MW Oscillator Coil	1	Y
L6	RLD4Y44	FM Antenna Coil	1	Y
L7	RLQY30S1-0	Choke Coil	1	Y
L8	RL04Y43	FM Oscillator Coil	1	Y
T1	RLI4M101	1st FM IF Transformer	1	X
T2,4	RLI4M301	2nd & 3rd FM IF Transformer	2	X
T3	RLI2M203	1st MW IF Transformer	1	X
T5	RLI2M205P	2nd MW IF Transformer	1	X
T6	RLI4M501	4th FM IF Transformer (Primary)	1	X
T7	RLI4M502	4th FM IF Transformer (Secondary)	1	X
T8	RLI2M402	3rd MW IF Transformer	1	X
T9	RLT3F30-W	Input Transformer, P=700Ω: S=1KΩ	1	X
T10	RLT2015-W	Output Transformer, P=24Ω: S=8Ω	1	X
T11	RLT5182-W	Power Transformer	SAFETY	1

VARIABLE RESISTORS				
R22	RVV14A26K-A	10KΩ (A), Tone Control	1	X
R23	RVV14D23K-A	10KΩ (D), Volume Control, W/ON-OFF Switch (S2)	1	X

VARIABLE CAPACITORS				
C3, 6, 16, 30	PVC22J20T2M	Variable Capacitor, W/Trimmer (C4, 17, 31)	1	X
C11, 12	RCV2T-16M	Trimmer	1	Y

COMPONENT COMBINATIONS				
Z1	BXCFF88108M	Coils & Capacitors	1	Y
Z2	EXNF2SL04C	10000PF X 2	1	Y

SPEAKER				
SP	EAS9P59SM	9cm (3 1/2") PM Dynamic Speaker, Imp. 8Ω	1	X

SWITCHES				
S1-1~S1-8	RSS123	Band Selector Switch	1	X
S4	RSR12A	Voltage Selector Switch	SAFETY	1

RESISTORS				
R43	ERD18VJ220	22Ω, 1/8Watt, ±5%, Carbon	1	Z
R6, 16, 21	ERD18VJ820	82Ω, 1/8Watt, ±5%, Carbon	3	Z
R12, 36	ERD18VJ101	100Ω, 1/8Watt, ±5%, Carbon	2	Z
R13	ERD18VJ121	120Ω, 1/8Watt, ±5%, Carbon	1	Z
R17, 25	ERD18VJ151	150Ω, 1/8Watt, ±5%, Carbon	2	Z
R34	ERD18VJ221	220Ω, 1/8Watt, ±5%, Carbon	1	Z
R14	ERD18VJ331	330Ω, 1/8Watt, ±5%, Carbon	1	Z
R4	ERD18VJ561	560Ω, 1/8Watt, ±5%, Carbon	1	Z
R38	ERD18VJ681	680Ω, 1/8Watt, ±5%, Carbon	1	Z
R10, 15, 27, 28, 39	ERD18VJ102	1KΩ, 1/8Watt, ±5%, Carbon	5	Z
R24, 26, 32	ERD18VJ272	2.7KΩ, 1/8Watt, ±5%, Carbon	3	Z
R33	ERD18VJ392	3.9KΩ, 1/8Watt, ±5%, Carbon	1	Z
R11	ERD18VJ472	4.7KΩ, 1/8Watt, ±5%, Carbon	1	Z
R35	ERD18VJ822	8.2KΩ, 1/8Watt, ±5%, Carbon	1	Z
R19	ERD18VJ153	15KΩ, 1/8Watt, ±5%, Carbon	1	Z
R40	ERD18VJ393	39KΩ, 1/8Watt, ±5%, Carbon	1	Z
R37	ERD18VJ823	82KΩ, 1/8Watt, ±5%, Carbon	1	Z
R31	ERD18VJ224	220KΩ, 1/8Watt, ±5%, Carbon	1	Z
R8	ERD18VJ274	270KΩ, 1/8Watt, ±5%, Carbon	1	Z
R30	ERD18VJ564	560KΩ, 1/8Watt, ±5%, Carbon	1	Z
R2	ERD18TJ270	27Ω, 1/8Watt, ±5%, Carbon	1	Z
R42	ERD18TJ101	100Ω, 1/8Watt, ±5%, Carbon	1	Z
R20, 29	ERD18TJ471	470Ω, 1/8Watt, ±5%, Carbon	2	Z
R1, 18	ERD18TJ332	3.3KΩ, 1/8Watt, ±5%, Carbon	2	Z
R9	ERD18TJ103	10KΩ, 1/8Watt, ±5%, Carbon	1	Z
R41	ERX-1ANJ1ROU	1Watt, Wire	SAFETY	1
R3	ERD18VJ822	8.2KΩ, 1/8Watt, ±5%, Carbon	1	Z
R7	ERD18VJ333	33KΩ, 1/8Watt, ±5%, Carbon	1	Z

CAPACITORS				
C15, 32	ECCD1H1R50	1.5PF, 50WV, ±0.25PF, Ceramic	2	Z
C10	ECCD1H0300C	3PF, 50WV, ±0.25PF, Ceramic	1	Z
C40	ECCD1H3R50	3.5PF, 50WV, ±0.25PF, Ceramic	1	Z
C1	ECCD1H0400	4PF, 50WV, ±0.25PF, Ceramic	1	Z
C18, 25	ECCD1H0500C	5PF, 50WV, ±0.25PF, Ceramic	1	Z
C2, 29	ECCD1H120K0	12PF, 50WV, ±10%, Ceramic	2	Z
C42, 45	ECCD1H220K0	22PF, 50WV, ±10%, Ceramic	2	Z
C59	ECCD1H331K	330PF, 50WV, ±10%, Ceramic	2	Z
C21, 56, 57	ECKD1H102PF	0.001μF, 50WV, ±10%, Ceramic	1	Z
C26	ECKE1H102MD	0.001μF, 50WV, ±20%, Ceramic	3	Z
C9	ECKE1H332MD	0.003μF, 50WV, ±20%, Ceramic	1	Z
C7, 8, 22, 24, 27, 39, 47, 58, 60, 63	ECKE1H472MD	0.0047μF, 50WV, ±20%, Ceramic	1	Z
C33, 34, 36, 61	ECKE1H103MD	0.01μF, 50WV, ±20%, Ceramic	10	Z
C52	UFD10YR682M	0.0068μF, 25WV, ±20%, Ceramic	1	Z
C23	ECMS05560K-H	56PF, 50WV, ±10%, Mica	1	Z

Ref.No.	Part No.	Description	Per Set	Remarks
C50	ECQ0M5223MD	0.022μF, 50WV, ±20%, Mica	1	Y
C35, 43	ECQ0G05223MZ-T	0.022PF, 50WV, ±20%, Polyester	2	Z
C20	ECQ0S05152KZ	1500PF, 50WV, ±10%, Styrol	1	Z
C13	ECQ0S05332KZ	3300PF, 50WV, ±10%, Styrol	1	Z
C14	ECQ0S1301JZ	300PF, 125WV, ±5%, Styrol	1	Z
C53	ECFE1E153MD-D	0.015μF, 25WV, ±20%, Ceramic	1	Z
C54	ECFD1E223MD-D	0.022μF, 25WV, ±20%, Ceramic	1	Z
C48	ECEA6V33	33μF, 6.3WV, Electrolytic	1	Y
C44	ECEA6V47	47μF, 6.3WV, Electrolytic	1	Y
C46, 55	ECEA6V1000	1000μF, 6.3WV, Electrolytic	2	Y
C28, 49	ECEA25V4R7	4.7μF, 25WV, Electrolytic	2	Y
C41, 62	ECEA50V1	1μF, 50WV, Electrolytic	2	Y
C37, 51	ECAG16ER1	0.1μF, 16WV, Electrolytic	2	Y
C38	ECAG16ER22	0.022μF, 16WV, Electrolytic	1	Y

CABINET				
CA1	RYMF818JBX	Cabinet Body Assembly (Black)	1	X
CA2	RYMF818JBX1	Cabinet Body Assembly (Gold)	1	X
CA3		Cabinet Body Only	(1)	
CA4		Panel, Dial	(1)	
CA5		Scale, Dial (White) (Black)	(1)	
		Scale, Dial (Green & Yellow) (Gold)	(1)	
		Pulley, Dial	(4)	
		Shaft, Pulley	(4)	
		Baffle, Speaker	(1)	
CA6	RGK558X2	Ornament (Black)	1	Y
CA6	RGK558X1	Ornament (Gold)	1	Y
CA7	RGK560X1	Ornament (Black)	1	Y
CA7	RGK560X	Ornament (Gold)	1	Y
CA8	RNW150-2	Washer, Dial Pulley	2	Z
CA9	RML68Z	Bracket, Pulley Shaft	1	Z
CA10	RDR21-1	Pulley, Dial	1	Z
CA11	RDY34	Shaft, Pulley	1	Z
CA12	XTN3+8B	Screw, Pulley Shaft Bracket M'tg	1	Z
CA13	RDY9065Z	Shaft, Tuning	1	Y
CA14	RUS81B	Spring, Tuning Shaft	1	Y
CA15	RD0482A	Drum, Dial	1	Y
CA16	XTN3+6B	Screw, Dial Drum M'tg	1	Z
CA17	XWG3	Washer, Dial Drum M'tg	1	Z
CA18	RDZ05A	Cord, Dial (500m)	1 Roll	Y
CA19	RD54090A	Spring, Dial	1	Y
CA20	RKT2S	Bracket, Handle Right M'tg	1	Y
CA21	RKT3S	Bracket, Handle Left M'tg	1	Y
CA22	RDP144Z	Pointer, Dial (Green) (Black)	1	X
CA22	RDP144Z1	Pointer, Dial (Red) (Gold)	1	X
CA23	XSB3+6BNS	Screw, Handle Bracket M'tg (RKT3S)	1	Z
CA24	XSB3+10BNS	Screw, Handle Bracket M'tg (RKT2S)	1	Y
CA25	RBN312Y	Knob, Tuning	1	Y
CA26	RBN251XK	Knob, Volume & Tone	2	Y
CA27	RMS12B	Bracket, Speaker	3	Z
CA28	XTN3+8B	Screw, Speaker Bracket M'tg	3	Z
CA29	RYFF818JBX	Cabinet Back Cover Assembly	1	X
CA30	(Not Available Order,)	Cabinet Back Cover Only	(1)	
CA31 (Fig. 1)	RGK634Z	Nylon Net	(1)	
CA32 (Fig. 1)	RGK634Y	Indicating Plate, EXT. POWER etc. Mark	1	Y
CA33	RMA5062Z	Name Plate	1	Y
CA34 (Fig. 1)	RJ0603Z	Bracket, Whip Antenna	1	Z
CA35 (Fig. 1)	RJC205B	Spring, Battery ⊖ Side	1	Y
CA36	XEARR170FESY	Terminal, Battery ⊕ Side	1	Y
	XW3	Whip Antenna	1	Y
	XWA3B	Washer, Whip Antenna M'tg	1	Z
CA37	XSB3+10BNS	Washer, Whip Antenna M'tg	1	Z
	RKK81Z	Screw, Whip Antenna M'tg	1	Z
CA38	RMA55A	Battery Cover	1	X
CA39	RJS17A-X	Terminal, Whip Antenna	1	Y
CA40	RJS34A-X	Connecting Socket	1	Y
		Connecting Socket, Whip Antenna & EXT. Power Source Jack	2	Y
CA41 (Fig. 1)	XTB3+35BFN	Screw, Cabinet Back Cover M'tg	1	Z
CA42 (Fig. 1)	XTB3+18BFN	Screw, Cabinet Back Cover M'tg	2	Z

CHASSIS				
CH1 (Fig. 1)	RJJ29Z-H	Jack, EXT. Power Source	SAFETY	1
CH2	RJJ10C	Jack, Earphone or EXT. Speaker		1
CH3	RML64Y	Bracket, Power Transistor		1
CH4	RUV312Z	Cover, EXT. Power Source Jack	SAFETY	1
CH5	RUV416Z	Cover, Voltage Selector Switch	SAFETY	1
CH6 (Fig. 3)	RDE35B	Lever, Dial Drum		1
	RHG5A	Rubber, Tuning Gang		1
CH7	RUV289-1	Cover, Band Selector Switch		1
CH8	RJP85Z	Connecting Plug, Battery ⊕ Side & Whip Antenna		2
CH9	RJT352Y	Connecting Terminal, Battery ⊖ Side		1
CH10	RMC192A	Shield Cover		1
CH11 (Fig. 2)	XTW3+10ER	Red Screw, Chassis M'tg		4
CH12	XTN23+8B	Screw, Voltage Selector Switch M'tg		2
	XTN3+8B	Screw, Power Transformer Bracket M'tg		1
CH13	XTW3+12E	Screw, EXT. Power Source Jack M'tg		2
	XSS26+5	Screw, Dial Drum Lever M'tg		1
	XYN26+C6	Screw, Tuning Gang M'tg		2
	XWS7AW	Washer, Volume & Tone Control M'tg		2
CH14	XNS7	Nut, Volume & Tone Control M'tg		2
CH15	XTN3+6F	Screw, Power Transformer M'tg		2
	XTN3+10B	Screw, P.O.B M'tg		1

ACCESSORIES				
A1	XEH1A1-P	Magnetic Earphone, 8Ω		1
A2	RJA21C	AC Cord, EXT. Power Source	SAFETY	1
A3	RQC3004A	Belt		1
A4	RJP120ZS-H	Plug, AC Power Source	SAFETY	1

PACKING				
P1	RPP166Z	Polyethylene Cover		1
P2	RPK361Z	Gift Box		1
	RPN9141Z	Pad (Complete)		1
P3	(Not Available Order,)	Pad (Left)		(1)
P4	RPN9141Z	Pad (Right)		(1)
P5	RPN2010Z	Pad (Back Side)		1
P6	RPE189Y	Accessory Box		1
P7	RQX5888Z	Instruction Book		1